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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,087	09/12/2003	Liem Gioi Tran	SVL920030083US1/IBMP029	8862

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EXAMINER

SMITH, GARRETT A

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2169

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06/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/662,087	Applicant(s) TRAN, LIEM GIOI	
	Examiner Garrett A. Smith	Art Unit 2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :12 September 2003; 3 November 2003.

DETAILED ACTION

1. This Office action is regarding the Application filed 12 September 2003. Claims 1 – 20 are pending.

Information Disclosure Statement

2. The Examiner has considered the Information Disclosure Statements filed **12 September 2003** and **3 November 2004**.

Abstract

3. Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.
4. The abstract of the disclosure is objected to because it exceeds 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 8 – 20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 8 – 20 are directed towards software, *per se*. The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*. Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994). Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in

Art Unit: 2169

Benson were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims **1 – 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeller et al (US Patent 5,724,570, dated 3 March 1998) and further in view of SQL-92 Specification section 6.10 (hereinafter SQL-92).

9. In regard to **claim 1**, Zeller et al teaches converting the SQL template into a converted SQL template (*the SQL query is converted by a normalizer, see col 7, lines 1 – 17*); acquiring a data type of the converted SQL template (*the data type is known as the query is acted on, such as BOOLEAN, see col 8, lines 27 – 31*); and storing the data type of the converted SQL template with the SQL template (*the data type and the can be stored in memory or on hard disk F100, see col 7, lines 1 – 17*). However, Zeller et al does not teach the explicit use of a cast function. SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the method of Zeller et al with

Art Unit: 2169

the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

10. In regard to **claim 2**, Zeller et al further teaches converting the SQL template comprises replacing tokens in the SQL template (*See Fig 3A and 3B as well as col 11, lines 21 – 30; the nested queries are replaced*).). However, Zeller et al does not teach the explicit use of a cast function. SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the method of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

11. In regard to **claim 3**, Zeller et al further teaches forming a valid SQL statement from the converted SQL template (*from an optimized query tree, equivalent SQL statement can be formed and executed by the executor module F110, see col 7, lines 1 – 17*). SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the method of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

12. In regard to **claim 4**, Zeller et al does not teach the explicit use of a cast function to determine validity of SQL statement. However, as shown by SQL-92, validity of a query can be determined by the results of a cast function. It would have been obvious to a person of ordinary skill in the art to use the method of Zeller et al with the cast function

Art Unit: 2169

of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

13. In regard to **claim 5**, Zeller et al further teaches acquiring the data type of the converted SQL statement comprises passing the valid SQL statement through an SQL processor (*the data type is known as the query is acted on, such as BOOLEAN, see col 8, lines 27 – 31; the query is acted on by the optimizer with is equivalent to a SQL processor*). SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the method of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

14. In regard to **claim 6**, Zeller et al further teaches inquiring if a descendent of the converted SQL template has been modified (*the optimizer and normalizer does operations based on rules which will transverse the tree and check for modifications, col 7, lines 1 – 17*). It would have been obvious to a person of ordinary skill in the art to use the method of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

15. In regard to **claim 7**, Zeller et al further teaches if the descendent of the converted SQL template has been modified, re-evaluating an SQL template for the descendent and cascading a modified data type up to ancestors of the converted SQL template (*the optimizer and normalizer does operations based on rules which will*

Art Unit: 2169

transverse the tree and check for modifications, col 7, lines 1 – 17, data types are moved up to the parent query as necessary for computation). It would have been obvious to a person of ordinary skill in the art to use the method of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

16. In regard to **claim 8**, Zeller et al teaches converting the SQL template into a converted SQL template (*the SQL query is converted by a normalizer, see col 7, lines 1 – 17*); acquiring a data type of the converted SQL template (*the data type is known as the query is acted on, such as BOOLEAN, see col 8, lines 27 – 31*); and storing the data type of the converted SQL template with the SQL template (*the data type and the can be stored in memory or on hard disk F100, see col 7, lines 1 – 17*). However, Zeller et al does not teach the explicit use of a cast function. SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the computer program product of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

17. In regard to **claim 9**, Zeller et al further teaches converting the SQL template comprises replacing tokens in the SQL template (*See Fig 3A and 3B as well as col 11, lines 21 – 30; the nested queries are replaced*).). However, Zeller et al does not teach the explicit use of a cast function. SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a

Art Unit: 2169

person of ordinary skill in the art to use the computer program product of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

18. In regard to **claim 10**, Zeller et al further teaches forming a valid SQL statement from the converted SQL template (*from an optimized query tree, equivalent SQL statement can be formed and executed by the executor module F110, see col 7, lines 1 – 17*). SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the computer program product of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

19. In regard to **claim 11**, Zeller et al does not teach the explicit use of a cast function to determine validity of SQL statement. However, as shown by SQL-92, validity of a query can be determined by the results of a cast function. It would have been obvious to a person of ordinary skill in the art to use the computer program product of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

20. In regard to **claim 12**, Zeller et al further teaches acquiring the data type of the converted SQL statement comprises passing the valid SQL statement through an SQL processor (*the data type is known as the query is acted on, such as BOOLEAN, see col 8, lines 27 – 31; the query is acted on by the optimizer with is equivalent to a SQL processor*). SQL-92 does teach that a cast function can be used to change or recast an

Art Unit: 2169

item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the computer program product of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

21. In regard to **claim 13**, Zeller et al further teaches inquiring if a descendent of the converted SQL template has been modified (*the optimizer and normalizer does operations based on rules which will transverse the tree and check for modifications, col 7, lines 1 – 17*). It would have been obvious to a person of ordinary skill in the art to use the computer program product of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

22. In regard to **claim 14**, Zeller et al further teaches if the descendent of the converted SQL template has been modified, re-evaluating an SQL template for the descendent and cascading a modified data type up to ancestors of the converted SQL template (*the optimizer and normalizer does operations based on rules which will transverse the tree and check for modifications, col 7, lines 1 – 17, data types are moved up to the parent query as necessary for computation*). It would have been obvious to a person of ordinary skill in the art to use the computer program product of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

23. In regard to **claim 15**, Zeller et al teaches converting the SQL template into a converted SQL template (*the SQL query is converted by a normalizer, see col 7, lines 1*

Art Unit: 2169

– 17); acquiring a data type of the converted SQL template (*the data type is known as the query is acted on, such as BOOLEAN, see col 8, lines 27 – 31*); and storing the data type of the converted SQL template with the SQL template (*the data type and the can be stored in memory or on hard disk F100, see col 7, lines 1 – 17*). However, Zeller et al does not teach the explicit use of a cast function. SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the system of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

24. In regard to **claim 16**, Zeller et al further teaches converting the SQL template comprises replacing tokens in the SQL template (*See Fig 3A and 3B as well as col 11, lines 21 – 30; the nested queries are replaced*).). However, Zeller et al does not teach the explicit use of a cast function. SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the system of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

25. In regard to **claim 17**, Zeller et al further teaches forming a valid SQL statement from the converted SQL template (*from an optimized query tree, equivalent SQL statement can be formed and executed by the executor module F110, see col 7, lines 1 – 17*). SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the

art to use the system of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

26. In regard to **claim 18**, Zeller et al does not teach the explicit use of a cast function to determine validity of SQL statement. However, as shown by SQL-92, validity of a query can be determined by the results of a cast function. It would have been obvious to a person of ordinary skill in the art to use the system of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

27. In regard to **claim 19**, Zeller et al further teaches acquiring the data type of the converted SQL statement comprises passing the valid SQL statement through an SQL processor (*the data type is known as the query is acted on, such as BOOLEAN, see col 8, lines 27 – 31; the query is acted on by the optimizer with is equivalent to a SQL processor*). SQL-92 does teach that a cast function can be used to change or recast an item as a different data type. It would have been obvious to a person of ordinary skill in the art to use the system of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

28. In regard to **claim 20**, Zeller et al further teaches if the descendent of the converted SQL template has been modified, re-evaluating an SQL template for the descendent and cascading a modified data type up to ancestors of the converted SQL template (*the optimizer and normalizer does operations based on rules which will*

Art Unit: 2169

transverse the tree and check for modifications, col 7, lines 1 – 17, data types are moved up to the parent query as necessary for computation). It would have been obvious to a person of ordinary skill in the art to use the system of Zeller et al with the cast function of SQL-92 because the cast function allows for queries with non-homogeneous data types to be operated on without data type errors.

Art Unit: 2169

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 5546576 A; US 5905987 A; US 5930795 A

30. The Examiner requests, in response to this Office action, that support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the Examiner in prosecuting the application.

31. When responding to this Office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Garrett A. Smith whose telephone number is (571) 270-1764. The examiner can normally be reached on Mon - Fri, 8:30 AM - 6:00 PM EST, Alt Fri Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on (571) 272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2169

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June 21, 2007



Garrett Smith
Patent Examiner
Art Unit 2169



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